Saskatchewan Ministry of Agriculture

CROP PRODUCTION NEWS

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CROP PRODUCTION

PRODUCTION

Editor's Comments

Faye Dokken, Crops Branch, Saskatchewan Agriculture

Although some crops are still lagging in development due to the cool weather this season, we have reached a critical period in the establishment of our crop yield potential. Cereal heads and uppermost leaves, as well as flowers and pods, of broadleaf crops must be healthy in order to achieve the best yield and quality possible. Crop scouting can be used to identify pest issues in time to protect these valuable plant parts before economic losses occur, as well as to determine the effectiveness of your pest control program. Keeping good records for each field annually (crop rotation, variety, fertility, pesticide programs, environmental conditions and other agronomic factors), and taking good notes each time you're scouting a crop will help you make decisions within the season as well as in future growing seasons.

Crop Production News will remind you of some of the issues to watch out for as the season progresses, but for even more information on production, visit the Saskatchewan Ministry of Agriculture website and click on Production (www.agriculture.gov.sk.ca/Production).

For an update on provincial crop progress throughout the growing season, see the weekly Crop Report (www.agriculture.gov.sk.ca/Crop-Report).

NOTE: Throughout this document, you will see that some publications are in blue font and underlined, indicating links to website information. If you are reading this off your computer screen, press the CTRL button and click your cursor on the link to take you directly to the website. ☼

Crop Production News is a biweekly publication prepared primarily by provincial specialists with the Crops Branch of the Saskatchewan Ministry of Agriculture. It is a compilation of articles related to entomology, plant pathology, weed science, soils and agronomy issues.

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Bertha Armyworm and Diamondback Moth Monitoring 2009

By Scott Hartley, Provincial Specialist, Insect and Vertebrate Pests

The risk to cruciferous crops, primarily canola and mustard, from bertha armyworms and diamondback moths has been low in 2009. Pheromone traps for each of these species were set out this spring with trap counts being forwarded to the Saskatchewan Ministry of Agriculture Crops Branch.

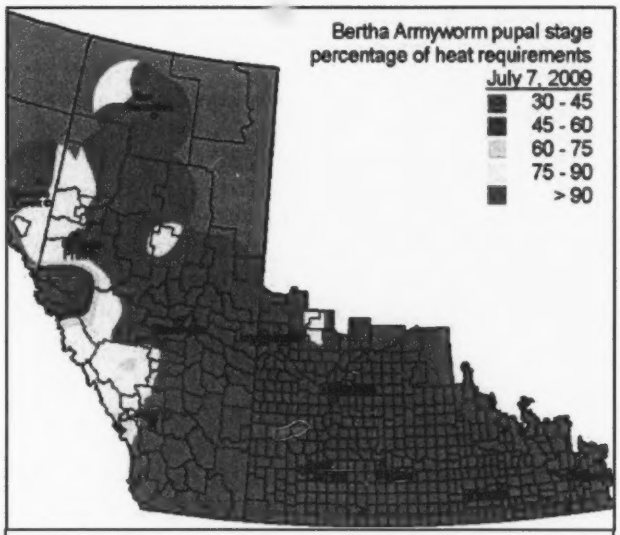

Figure 1: Development Model and Map of Percentage of Heat Requirements for Bertha Armyworm Moth Emergence. Source: Agriculture and Agri-Food Canada.

Diamondback Moth

Wind currents have been monitored by Agriculture and Agri-Food Canada (AAFC) using Environment Canada data. Few wind currents have been favourable for bringing the moths onto the Prairies in 2009. In addition, the traps have not caught any significant numbers of moths this year. Therefore, there is minimal risk from diamondback moths in most areas since they are arriving too late in the season to produce the multiple generations that pose the greatest threat to crops.

Bertha armyworm

Although pheromone traps were set up by co-operators in June, the spring had been too cool to accumulate the heat units required for pupal development and emergence of the adult moths. However, AAFC's map (Figure 1) indicates that, by July 7, most of the Prairies had accumulated enough heat units for bertha armyworm moths to begin to emerge. Co-operators are urged to check their monitoring traps and report the field locations and moth numbers to the coordinator in Regina. ☼

Wheat Midge Update

By Scott Hartley, Provincial Specialist, Insect and Vertebrate Pests

With the slow accumulation of heat units in 2009, wheat midge emergence has also been delayed. As of July 10, only a few areas had received enough heat to expect 50 per cent emergence of adult midge. The largest area is in the west-central region, north of the South Saskatchewan River extending north to Kindersley.

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Wheat Midge Update
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Other areas of similar heat unit development are in the southeast and central regions. Depending on temperature accumulation, most of southern Saskatchewan should have seen about 10 per cent emergence of adult midge flies during the second week of July.

However, moisture also plays a key role in midge development. Areas that did not receive a minimum of 20 mm of precipitation prior to the end of May should expect delayed and somewhat erratic midge emergence.

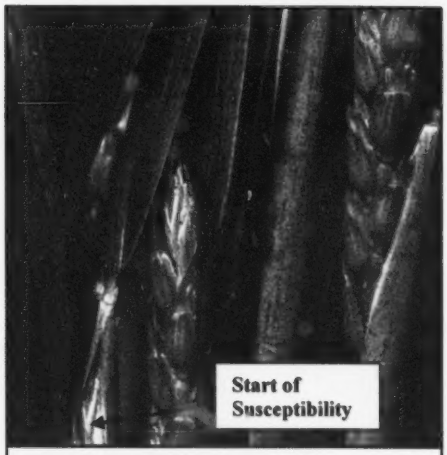

Figure 2: Susceptible Wheat Heads.
Source: Agriculture and Agri-Food Canada.

Field scouting will be important to determine if wheat crops are susceptible to wheat midge damage. Susceptibility starts as the boot swells and any part of the wheat head becomes visible, and continues until the emergence of the yellow anthers (anthesis) (Figure 2). In fields where there is considerable variation in maturity and extensive tillering, susceptibility of the crop will extend over a longer period of time. Keep in mind that the primary stem and the first two tillers are the main yield components of the crop, and should be monitored closely when the midge are flying. Once the majority of the crop has reached anthesis, susceptibility drops dramatically.

The Canadian Wheat Board is posting daily updates of degree day development and wheat midge emergence at the following link:
www.cwb.ca/public/en/farmers/weather/midge/ ✿

Cereal Rust Update

By Blaine Recksiedler, Provincial Specialist, Cereal Crops

Cereal rust diseases are caused by *Puccinia* spp., and rust spores generally follow the wind currents on the "*Puccinia* pathway" of the central U.S. corridor. Many factors will interplay to determine the build-up of rust spores and the disease severity for the Prairies, such as timing of crop development along the *Puccinia* pathway, temperature, humidity, changes to rust races and susceptibility of varieties.

Wheat Stem Rust

Wheat stem rust is currently increasing in certain locations in the central plains of the United States, but there have not been any significant wind currents passing from these regions to Saskatchewan.
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Cereal Rust Update

Figure 3: Leaf Rust.
Source: Agriculture and Agri-Food Canada.

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The majority of bread wheat varieties grown in Manitoba and Saskatchewan have good resistance to stem rust, while durum wheat varieties offer very good resistance.

Wheat Leaf Rust

Wheat leaf rust (Figure 3) is considered to be widespread at generally low levels due to the cool weather in the northern plains of the United States. It has been detected as far north as southeastern North Dakota and west-central Minnesota. Incidence and severity will increase as temperatures increase in July. The range of resistance among wheat varieties is greater for leaf rust than for stem rust. Many varieties are rated as good or very good for resistance to leaf rust; however, some very popular varieties within most wheat classes, except for durum wheat, are rated as only poor or fair. Durum wheat varieties offer very good resistance.

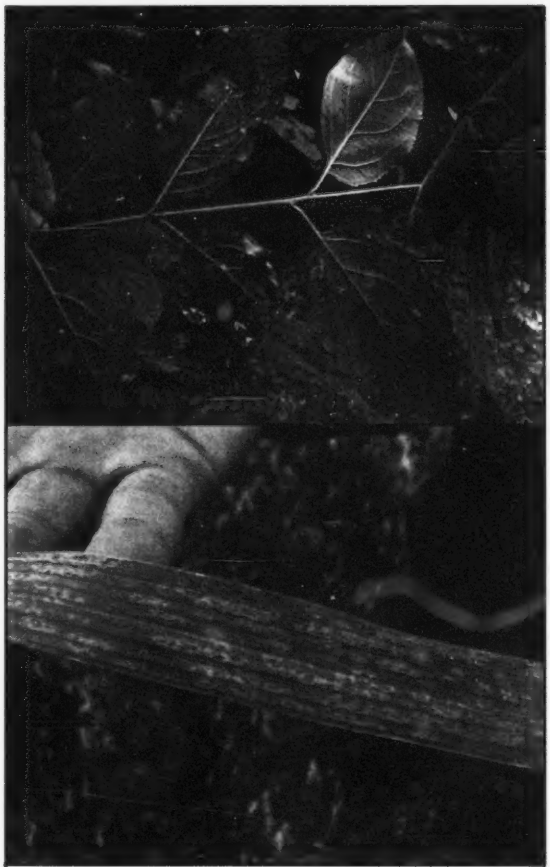

Figure 4: Crown Rust on Buckthorn (top) and Oat (bottom). Source: Saskatchewan Ministry of Agriculture (top) and University of Saskatchewan (bottom).

Wheat Stripe Rust

The threat from wheat stripe rust has been rated as significant in parts of Nebraska. Stripe rust prefers high humidity and cool night time temperatures for infection, so it is frequently found in the regions of higher elevation in Alberta and British Columbia. It was rarely found in Manitoba or Saskatchewan. However, since 2000, stripe rust in wheat has been appearing more frequently in those provinces.

Oat Stem Rust and Crown Rust

Oat stem rust is considered to be a minor issue, while oat crown rust levels are considered light to moderate in Minnesota. Crown rust was recently observed on the alternate host, buckthorn, in a Regina city park (Figure 4). Leggett, HiFi and Triactor oat varieties offer good or very good resistance to current races of leaf rust.

Summary

Environmental conditions conducive to rust establishment are warm days, heavy dew and high winds.

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Cereal Rust Update
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The extent to which our crops will be affected will depend on weather, genetic resistance and stage of crop development.

Rust inoculum levels are generally low due to cool growing conditions, but because crop development is delayed, rust could still be a threat for this growing season. Producers should monitor their fields and consider a fungicide application, if appropriate. Most earlier-seeded crops, especially winter wheat, may have already reached their yield and quality potential by the time rust becomes established. Later crops, however, particularly varieties with poor resistance, will be at serious risk if conditions turn favourable to rust development, especially if significant inoculum levels have been established in the United States.

Developing genetic resistance is the best strategy to combat rust. Crop varieties that do not offer good resistance should be grown outside the traditional rust areas. Southern Manitoba and southeastern Saskatchewan are at the greatest risk of incurring significant yield loss to rust. For rust resistance ratings, refer to the publication *Varieties of Grain Crops 2009* on the Saskatchewan Ministry of Agriculture website.

The Cereal Rust Bulletin tracks the progress of rust in the U.S., and can be found on the USDA Agricultural Research Service website at http://www.ars.usda.gov/Main/docs.htm?docid=9757 ✿

Grasshoppers on Lentils

By Dale Risula, Provincial Specialist, Special Crops

Crop and insect development have been slow in 2009; however, since the weather has begun to warm up in the province, several producers have reported finding young grasshoppers in or near their lentil crops.

Lentil is not a preferred host for grasshoppers, but they will consume the crop if no other option is available. The current economic threshold (ET) for grasshoppers in lentil fields is two per square metre, which is lower than the ET for cereal crops due to the grasshoppers' feeding preferences: flowers (Figure 5) and developing pods (Figure 6). Because they feed directly on the reproductive portions of the plant, grasshoppers' impact on lentil yield can be more severe.

Figure 5: Grasshopper damage to lentil flowers. Source: Agriculture and Agri-Food Canada.

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Grasshoppers on Lentils
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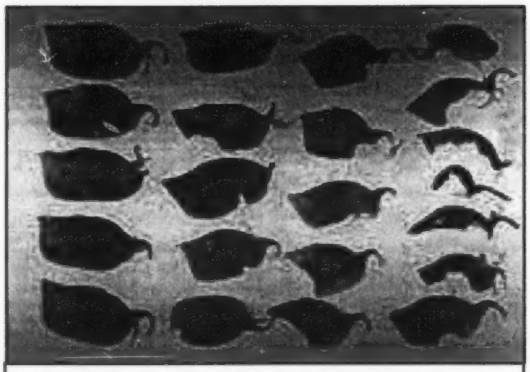

Figure 6: Grasshopper damage to lentil pods.
Source: Agriculture and Agri-Food Canada.

Producers should scout their fields for grasshoppers from the early bud stage through to pod development to determine the presence and damage potential of the pest. Spur-throated grasshoppers, particularly the two-stripe grasshopper (*Melanoplus bivittatus*), are primarily responsible for damage to lentil crops. Grasshoppers are also very mobile at later stages, so neighbouring fields may also be at risk. Grasshoppers frequent a field's perimeter and areas of sparse growth where temperatures are higher. Therefore, adequate control can be achieved if insecticides are applied in one or two spray widths around the margin of the crop and in areas of thin plant stands. Large numbers of grasshoppers at harvest are also a problem because grasshopper body parts can contaminate the sample and reduce crop quality.

There are several insecticides available for controlling grasshoppers in lentil fields. Pre-harvest intervals on these products range from seven to 60 days. Take this into consideration when choosing a product, as excessive insecticide levels in the harvested seed will affect the marketability of the crop. Consult the *2009 Guide to Crop Protection* and product labels for more information on insecticides and insect thresholds. ✡

For information about submitting samples to Saskatchewan Agriculture's Crop Protection Lab, go to www.agriculture.gov.sk.ca/ (Programs & Services > Crop Protection Lab Services); Or phone (306) 787-8130.

Canadian Organic Standards are Nationally Enforced

By Chantal Jacobs, Provincial Specialist, Organic Crops

It's official!

On June 30, 2009 the Organic Product Regulations (OPRs) were implemented as the final segment of the Canadian Organic Regime (COR). The Regime encompasses three elements: the national standard for organic agriculture, the regulations and the Canada Organic logo. The OPRs are enforced by the Canadian Food Inspection Agency (CFIA), and regulate domestic and imported organic products to ensure that they adhere to the strict guidelines in the national organic standard. It is anticipated that establishment of the COR will increase consumer confidence in the term "organic" and enhance business with international trading partners such as the European Union, the United States of America and Japan.

Figure 7: Canada Organic Biologique logo.
Source: Canadian Food Inspection Agency.

To facilitate trade of certified organic products between Canada and the U.S., an equivalency agreement was signed by both countries on June 17, 2009. Both the Canada Organic Biologique logo (Figure 7) and the United States Department of Agriculture Organic seal may be used on certified organic products marketed in both countries. Equivalency negotiations with other international trading partners, including the EU, are currently underway.

What does this mean for Saskatchewan organic producers?

For the majority it should be business as usual; however, it is important that growers ensure they obtain organic certification from a CFIA-accredited certification agency. A list of accredited agencies is available on the CFIA website (www.inspection.gc.ca/english/fssa/orgbio/cbliste.shtml).

For more information on the Canadian Organic Regime, visit the CFIA website at: www.inspection.gc.ca/english/fssa/orgbio/orgbioe.shtml and the Organic Federation of Canada website at www.organicfederation.ca/index.html. ✿

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